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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/751,168	12/31/2003	Karl L. King	27441.002	3397
36122	7590	08/24/2004	EXAMINER	
DUFT SETTER OLLILA & BORNSSEN LLC			SUAREZ, FELIX E	
2060 BROADWAY			ART UNIT	
SUITE 300			PAPER NUMBER	
BOULDER, CO 80302			2857	

DATE MAILED: 08/24/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/751,168

Applicant(s)

KING ET AL.

Examiner

Felix E Suarez

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 31 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 12-23 and 28-32 is/are rejected.
- 7) ☒ Claim(s) 8-11 and 24-27 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/31 Dec. 2003.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this

Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

1. Claims 1-7, 12-23 and 28-32 are rejected under 35 U.S.C. 102(a) as being unpatentable over Hsiung et al. (U.S. Patent Application Publication No. 2003/0109951).

With respect to claims 1 and 17, Hsiung et al. (hereafter Hsiung) teaches a method of operating a process analysis system to analyze a process, the method (or process analysis system) comprising:

in a plurality of sensors, monitoring the process to generate sensor signals (see page 3, paragraphs [0029]-[0030]);

in a processing system, processing the sensor signals to detect a deviation from a baseline for the process (see page 6 paragraph [0057] and page 13, paragraphs [0162], [0164]);

in the processing system, generating a process vector for the deviation in response to detecting the deviation (see page 6 paragraph [0058]; page 33 paragraph [0428] and page 35 table 10 [Inverse Least Squares]); and

in the processing system, comparing the process vector to a plurality of library vectors to classify the deviation (see page 6, paragraphs [0059], [0063]; page 10, paragraphs [0123]-[0126] and page 11 paragraph [0144]).

With respect to claims 2 and 18, Hsiung further teaches that the process comprises a system that supplies water (see pages 7-8, paragraphs [0080]-[0081]).

With respect to claims 3 and 19, Hsiung further teaches that the sensor signals indicate pH, conductivity, turbidity, chlorine, and total organic carbon of the water (see pages 7-8, paragraphs [0080]-[0081], [0086]).

With respect to claims 4 and 20, Hsiung further teaches that the classified deviation comprises a contaminant in the water (see page 9 paragraph [0107]).

With respect to claims 5 and 21, Hsiung further teaches comprising signaling a control system to operate a valve in response to classifying the deviation as a contaminant in the water (see page 9 paragraph [109]).

With respect to claims 6 and 22, Hsiung further teaches comprising signaling a control system to add a marker to the water in response to classifying the deviation as a contaminant in the water (see page 9 paragraph [0111]).

With respect to claims 7 and 23, Hsiung further teaches that the marker comprises a colorant (see pages 23-24, paragraph [0343] and TABLE 5 [Coherence Difference Chart]).

With respect to claims 12 and 28, Hsiung further teaches that processing the sensor signals to detect the deviation from the baseline comprises processing the sensor signals to produce a single variable and comparing the single variable to a threshold (see page 16 paragraph [0192] and page 26, paragraphs [0359]-[0364]).

With respect to claims 13 and 29, Hsiung further teaches that generating the process vector for the deviation comprises generating a unit vector (see pages 10, 11; paragraphs [0134]-[0141]).

With respect to claims 14 and 30, Hsiung further teaches comparing the process vector to the library vectors comprises comparing an angle between the process vector and one of the library vectors to a threshold (see page 39, paragraphs [0488]-[0489]).

With respect to claims 15 and 31, Hsiung further teaches that the library vectors are associated with abnormal operations and classifying the deviation

comprises identifying one of the abnormal operations that is associated with one of the library vectors that matches the process vector (see page 39, paragraphs [0483]-[0486] and page 40 paragraph [0500]).

With respect to claims 16 and 32, Hsiung further teaches comprising in response to an unknown classification, storing the process vector as a new one of the library vectors and associating an abnormal operation with the new library vector (see page 15 paragraph [0178] and page 39, paragraphs [0483]-[0486]).

2. Claims 8-11 and 24-27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

#### ***Prior Art***

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Harrison [U.S. Patent No. 6,301,572] describes an input matrix as a vector of values.


Rose-Pehrsson et al. [U.S. Patent No. 5,469,369] describes a sensor array system.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Felix Suarez, whose telephone number is (571) 272-2223. The examiner can normally be reached on weekdays from 8:30 a.m. to 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on (571) 272-2216. The fax phone numbers for the organization where this application or proceeding is assigned is 703-872-9306 for regular communications and for After Final communications.

August 17, 2004

F.S.

  
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